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EXAMINER

RONES, CHARLES

ART UNIT

PAPER NUMBER

2175

DATE MAILED: 03/20/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/042,093

Applicant(s)

KLEINBERG, JON MICHAEL

Examiner

Charles L. Rones

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15-32, 34-50 and 52-66 is/are rejected.
- 7) ☐ Claim(s) 14, 33 and 51 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Preliminary Amendment***

The preliminary amendment timely filed on January 8, 2002 has been entered.

***Oath/Declaration***

The reissue oath/declaration filed with this application is defective (see 37 CFR 1.175 and MPEP § 1414) because of the following:

There was no offer to surrender the patent. The original patent, or an affidavit or declaration as to loss or inaccessibility of the original patent, must be received before this reissue application can be allowed. See 37 CFR 1.178.

Also, there was no 3.73(b) showing that IBM is the assignee of the entire interest. This makes the assent and the oath defective.

This application is objected to under 37 CFR 1.172(a) as lacking the written consent of all assignees owning an undivided interest in the patent. The consent of the assignee must be in compliance with 37 CFR 1.172. See MPEP § 1410.01.

A proper assent of the assignee in compliance with 37 CFR 1.172 and 3.73 is required in reply to this Office action.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-13, 15-32, 34-50, and 52-66 are rejected under 35 U.S.C. 102(e) as being anticipated by Li U.S. Patent No. 5,920,859 ('Li').

**Li** discloses:

As to claims 1, 20, and 39,

identifying an initial set of information resources; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41;

defining initial authoritativeness (dot product) information for the initial set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41;

using the initial authoritativeness information as input authoritativeness information, executing the step of:

producing at least one set of authoritativeness information based on links related to resources of the input set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41; and

producing a final set of information resources based on the at least one set of authoritativeness information; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.

As to claims 2, 21, and 40

wherein the information resources include World Wide Web pages, and the content-based links include hyperlinks; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.

As to claims 3, 22, and 41,

wherein the step of identifying an initial set of information resources includes obtaining, as an input, an information resource containing subject matter of interest; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.

As to claims 4, 23, and 42,

wherein the step of identifying an initial set of information resources includes identifying a further set of information resources linked to the input information resource; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.

As to claims 5, 24, and 43,

the step of executing the steps of producing first and second authoritativeness information are operative in a series of iterations; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41;

the initial authoritativeness information is used as input authoritativeness information for a first iteration; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41; and

the produced first and second authoritativeness information is a result of the iteration, the first and second authoritativeness information produced in a given iteration to be used as the input authoritativeness information for the next

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iteration; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.

As to claims 6, 25, and 44,

wherein the steps of producing first authoritativeness information and producing second authoritativeness information are executed in a series of iterations until a predetermined condition is met; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.

As to claims 7, 26, and 45,

wherein the predetermined condition includes the execution of a specified number of iterations; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.

As to claims 8, 27, and 45,

wherein the predetermined condition includes a steady state in which further iterations result in substantially the same results; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.

As to claims 9, 28, and 46,

wherein the step of identifying an initial set of information resources includes executing a keyword-based query search, results of the search including information resources to be included in the initial set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.

As to claims 10, 29 and 47,

wherein the step of identifying an initial set of information resources further includes identifying information resources linked to or from the information resources which are the results of the search, the former information resources also to be included in the initial set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.

As to claims 11, 30, and 48,

wherein the step of defining initial authoritativeness information includes selecting an initial numerical authoritativeness value for each of the information resources of the initial set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.



As to claims 12, 31, and 49,

wherein the step of defining initial authoritativeness information further includes defining an authority value and a hub value for each of the information resources of the initial set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.

As to claims 13, 32, and 50,

wherein the defined authority values and hub values are processed as vectors, each vector containing a respective term corresponding with each respective one of the information resources of the initial set, and having stored therein the value defined for that respective one of the information resources of the initial set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.

As to claims 15, 34 and 52,

wherein, for each iteration:

the hub value for an information resource is updated as the sum of the authority values for authority information resources which point to the hub information resource; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41; and

the authority value for an information resource is updated as the sum of the hub values for hub information resources which are pointed to by the information

resource; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67;  
8:9:50-65; 10:15-41.

As to claims 16, 35, and 53,

wherein each iteration further includes normalizing the hub and authority values  
for the information resources; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67;  
7:2-11 and 56-67; 8:9:50-65; 10:15-41.

As to claims 17, 36, and 54,

each information resource is associated with an authority value and a hub value;  
See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65;  
10:15-41;  
and

the step of producing a final set of information resources includes selecting  
information resources from the set based on the hub and authority values; See Fig. 6;  
Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.

As to claims 17, 37 and 55,

wherein the step of selecting includes selecting information resources whose hub  
values or authority values have greatest magnitudes; See Fig. 6; Abstract; 3:48-67;  
4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.

As to claims 18, 38, and 56,

wherein the step of selecting includes selecting a plurality of successive communities, selecting each successive community including selecting information resources whose hub values or authority values have greatest magnitudes of those information resources not already selected for a prior community; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.

As to claims 58, 61, and 64,

(i) producing first authoritativeness information about a set of information resources pointed to by links in resources of the input set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41, and

(ii) producing second authoritativeness information about a set of information resources having links that point to resources of the input set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.

As to claims 59, 62, and 65,

wherein the step of producing at least one set of authoritativeness information based on links related to resources of the input set includes the step of producing authoritativeness information about a set of information resources pointed to by links in resources of the input set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.

As to claims 60, 63, and 66,

wherein the step of producing at least one set of authoritativeness information based on links related to resources of the input set includes the step of producing authoritativeness information about a set of information resources having links that point to resources of the input set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:9:50-65; 10:15-41.

Claims 1-13, 15-32, 34-50, and 52-66 are rejected under 35 U.S.C. 102(e) as being anticipated by Page U.S. Patent No. 6,285,999 ('Page').

Page discloses:

As to claims 1, 20, and 39,

identifying an initial set of information resources; See Fig.3; 4:5-49; 6:11-55; 7:23-55; 8:10-41;

defining initial authoritativeness (cites) information for the initial set; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41;

using the initial authoritativeness information as input authoritativeness information, executing the step of:  
producing at least one set of authoritativeness information based on links related to resources of the input set; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41;  
and

producing a final set of information resources based on the at least one set of authoritativeness information; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41.

As to claims 2, 21, and 40

wherein the information resources include World Wide Web pages, and the content-based links include hyperlinks; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41.

As to claims 3, 22, and 41,

wherein the step of identifying an initial set of information resources includes obtaining, as an input, an information resource containing subject matter of interest; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41.

As to claims 4, 23, and 42,

wherein the step of identifying an initial set of information resources includes identifying a further set of information resources linked to the input information resource; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41.

As to claims 5, 24, and 43,

the step of executing the steps of producing first and second authoritativeness information are operative in a series of iterations; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41;

the initial authoritativeness information is used as input authoritativeness

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information for a first iteration; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41; and the produced first and second authoritativeness information is a result of the iteration, the first and second authoritativeness information produced in a given iteration to be used as the input authoritativeness information for the next iteration; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41.

As to claims 6, 25, and 44,

wherein the steps of producing first authoritativeness information and producing second authoritativeness information are executed in a series of iterations until a predetermined condition is met; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41.

As to claims 7, 26, and 45,

wherein the predetermined condition includes the execution of a specified number of iterations; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41.

As to claims 8, 27, and 45,

wherein the predetermined condition includes a steady state in which further iterations result in substantially the same results; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41.

As to claims 9, 28, and 46,

wherein the step of identifying an initial set of information resources includes executing a keyword-based query search, results of the search including information resources to be included in the initial set; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41.

As to claims 10, 29 and 47,

wherein the step of identifying an initial set of information resources further includes identifying information resources linked to or from the information resources which are the results of the search, the former information resources also to be included in the initial set; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41.

As to claims 11, 30, and 48,

wherein the step of defining initial authoritativeness information includes selecting an initial numerical authoritativeness value for each of the information resources of the initial set; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41.

As to claims 12, 31, and 49,

wherein the step of defining initial authoritativeness information further includes defining an authority (cite) value and a hub (node) value for each of the information resources of the initial set; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41.

As to claims 13, 32, and 50,

wherein the defined authority values and hub values are processed as vectors, each vector containing a respective term corresponding with each respective one of the information resources of the initial set, and having stored therein the value defined for that respective one of the information resources of the initial set; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41.

As to claims 15, 34 and 52,

wherein, for each iteration:

the hub (node) value for an information resource is updated as the sum of the authority values for authority information resources which point to the hub information resource; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41; and

the authority value for an information resource is updated as the sum of the hub values for hub information resources which are pointed to by the information resource; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41.

As to claims 16, 35, and 53,

wherein each iteration further includes normalizing the hub (node) and authority (cite) values for the information resources; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41.



As to claims 17, 36, and 54,

each information resource is associated with an authority value and a hub value;  
See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41;  
and

the step of producing a final set of information resources includes selecting  
information resources from the set based on the hub and authority values; See Fig. 3;  
4:5-49; 6:11-55; 7:23-55; 8:10-41.

As to claims 17, 37 and 55,

wherein the step of selecting includes selecting information resources whose hub  
values or authority values have greatest magnitudes (rank) ; See Fig. 3; 4:5-49; 6:11-  
55; 7:23-55; 8:10-41.

As to claims 18, 38, and 56,

wherein the step of selecting includes selecting a plurality of successive  
communities, selecting each successive community including selecting information  
resources whose hub values or authority values have greatest magnitudes of those  
information resources not already selected for a prior community; See Fig. 3; 4:5-49;  
6:11-55; 7:23-55; 8:10-41.

As to claims 58, 61, and 64,

(i) producing first authoritativeness information about a set of information resources pointed to by links in resources of the input set; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41, and

(ii) producing second authoritativeness information about a set of information resources having links that point to resources of the input set; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41.

As to claims 59, 62, and 65,

wherein the step of producing at least one set of authoritativeness information based on links related to resources of the input set includes the step of producing authoritativeness information about a set of information resources pointed to by links in resources of the input set; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41.

As to claims 60, 63, and 66,

wherein the step of producing at least one set of authoritativeness information based on links related to resources of the input set includes the step of producing authoritativeness information about a set of information resources having links that point to resources of the input set; See Fig. 3; 4:5-49; 6:11-55; 7:23-55; 8:10-41.

Claims 1-13, 15-32, 34-50, and 52-66 are rejected under 35 U.S.C. 102(e) as being anticipated by Brown et al. U.S. Patent No. 5,875,446 ('Brown').

Brown discloses:

As to claims 1, 20, and 39,

identifying an initial set of information resources; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55;

defining initial authoritativeness information for the initial set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55;

using the initial authoritativeness information as input authoritativeness information, executing the step of:

producing at least one set of authoritativeness information based on links related to resources of the input set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55; and

producing a final set of information resources based on the at least one set of authoritativeness information; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 2, 21, and 40

wherein the information resources include World Wide Web pages, and the content-based links include hyperlinks; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 3, 22, and 41,

wherein the step of identifying an initial set of information resources includes obtaining, as an input, an information resource containing subject matter of interest; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 4, 23, and 42,

wherein the step of identifying an initial set of information resources includes identifying a further set of information resources linked to the input information resource; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 5, 24, and 43,

the step of executing the steps of producing first and second authoritativeness information are operative in a series of iterations; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55;

the initial authoritativeness information is used as input authoritativeness

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information for a first iteration; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55; and

the produced first and second authoritativeness information is a result of the iteration, the first and second authoritativeness information produced in a given iteration to be used as the input authoritativeness information for the next iteration; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 6, 25, and 44,

wherein the steps of producing first authoritativeness information and producing second authoritativeness information are executed in a series of iterations until a predetermined condition is met; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 7, 26, and 45,

wherein the predetermined condition includes the execution of a specified number of iterations; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 8, 27, and 45,

wherein the predetermined condition includes a steady state in which further iterations result in substantially the same results; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 9, 28, and 46,

wherein the step of identifying an initial set of information resources includes executing a keyword-based query search, results of the search including information resources to be included in the initial set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 10, 29 and 47,

wherein the step of identifying an initial set of information resources further includes identifying information resources linked to or from the information resources which are the results of the search, the former information resources also to be included in the initial set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 11, 30, and 48,

wherein the step of defining initial authoritativeness information includes selecting an initial numerical authoritativeness value for each of the information

resources of the initial set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 12, 31, and 49,

wherein the step of defining initial authoritativeness information further includes defining an authority value and a hub value for each of the information resources of the initial set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 13, 32, and 50,

wherein the defined authority values and hub values are processed as vectors, each vector containing a respective term corresponding with each respective one of the information resources of the initial set, and having stored therein the value defined for that respective one of the information resources of the initial set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 15, 34 and 52,

wherein, for each iteration:

the hub value for an information resource is updated as the sum of the authority values for authority information resources which point to the hub information

resource; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67;  
8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55; and

the authority value for an information resource is updated as the sum of  
the hub values for hub information resources which are pointed to by the information  
resource; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67;  
8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 16, 35, and 53,

wherein each iteration further includes normalizing the hub and authority values  
for the information resources; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67;  
7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 17, 36, and 54,

each information resource is associated with an authority value and a hub value;  
See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-  
65; 10:15-41; 13:40-6; 14:45-55;  
and

the step of producing a final set of information resources includes selecting  
information resources from the set based on the hub and authority values; See Fig. 6;  
Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-  
41; 13:40-6; 14:45-55.



As to claims 17, 37 and 55,

wherein the step of selecting includes selecting information resources whose hub values or authority values have greatest magnitudes; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 18, 38, and 56,

wherein the step of selecting includes selecting a plurality of successive communities, selecting each successive community including selecting information resources whose hub values or authority values have greatest magnitudes of those information resources not already selected for a prior community; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 58, 61, and 64,

(i) producing first authoritativeness information about a set of information resources pointed to by links in resources of the input set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55; and

(ii) producing second authoritativeness information about a set of information resources having links that point to resources of the input set; See Fig. 6; Abstract;

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3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 59, 62, and 65,

wherein the step of producing at least one set of authoritativeness information based on links related to resources of the input set includes the step of producing authoritativeness information about a set of information resources pointed to by links in resources of the input set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

As to claims 60, 63, and 66,

wherein the step of producing at least one set of authoritativeness information based on links related to resources of the input set includes the step of producing authoritativeness information about a set of information resources having links that point to resources of the input set; See Fig. 6; Abstract; 3:48-67; 4:1-50; 5:4-38; 6:30-67; 7:2-11 and 56-67; 8:20-56; 9:50-65; 10:15-41; 13:40-6; 14:45-55.

***Allowable Subject Matter***

Claims 14, 33 and 51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an Examiner's statement of reasons for the indication of allowable subject matter: The prior art of record does not disclose, make obvious, or otherwise suggest the structure of the applicant's product, method, and system for executing a search of information sources wherein an initial hub value is defined as 1 if the information resource was found by the keyword-based query search, and 0 if the information resource is linked to or from the information resources which are the results of the search; and an initial authority value is defined as 0 for all information resources together with the other limitations of the independent claims. The dependent claims being further limiting and definite are also allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably **accompany** the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles L. Rones whose telephone number is 703-306-3030. The examiner can normally be reached on Monday-Thursday 8am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici can be reached on 703-305-3830. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3800.

A handwritten signature in black ink that reads "Charles L. Rones". The signature is written in a cursive style with a large initial "C".

**Charles L. Rones**  
**Primary Examiner**  
**Art Unit 2175**

March 19, 2003